



Matched Comparison of Phaco-Trabectome to Trabectome in Phakic Patients



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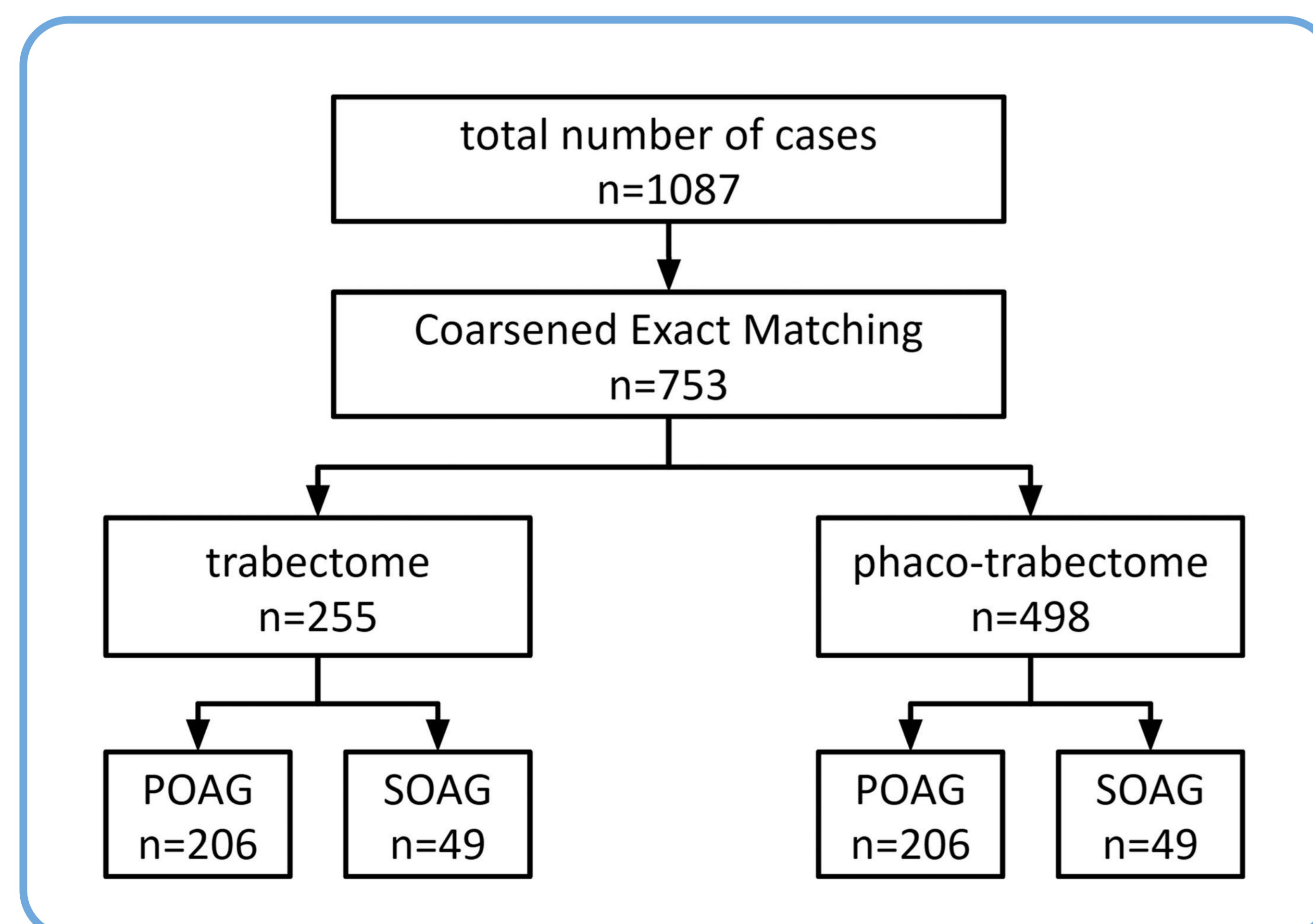
Purpose

To compare intraocular pressure (IOP) after trabectome-mediated ab interno trabeculectomy in phakic patients (T) and trabectome with same session phacoemulsification (PT) using Coarsened Exact Matching. Although phacoemulsification is associated with IOP reduction when performed on its own, it is not known how much it contributes in PT.

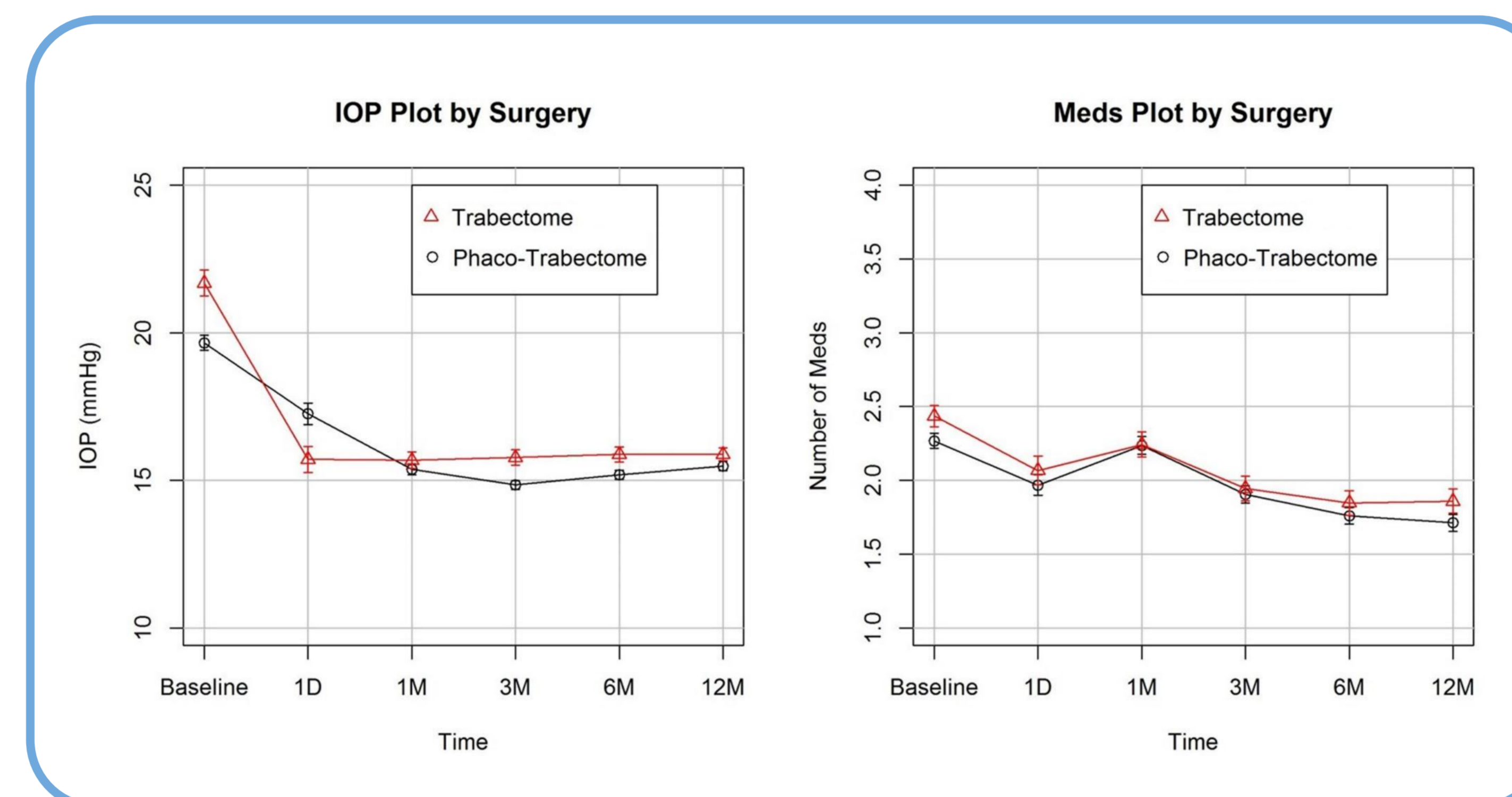
Patients and Methods

Subjects were divided into phakic T and PT. Exclusion criteria were follow-up for <12 months and additional glaucoma surgery. Demographics were compared by the Mann-Whitney U test and chi-squared test for continuous and categorical variables, respectively. Multiple imputation was utilized to avoid eliminating data with missing values. Groups were then matched using Coarsened Exact Matching based on age, race, type of glaucoma, baseline IOP, and number of preoperative glaucoma medications. Univariate linear regression was used to examine IOP reduction after surgery; those variables that were statistically significant were included in the final multivariate regression model.

Results



Every 1 mmHg increase in baseline IOP correlated to an additional IOP reduction of 0.80 ± 0.02 mmHg. Phacoemulsification was not found to be a statistically significant contributor to IOP when comparing T and PT ($p \geq 0.05$).



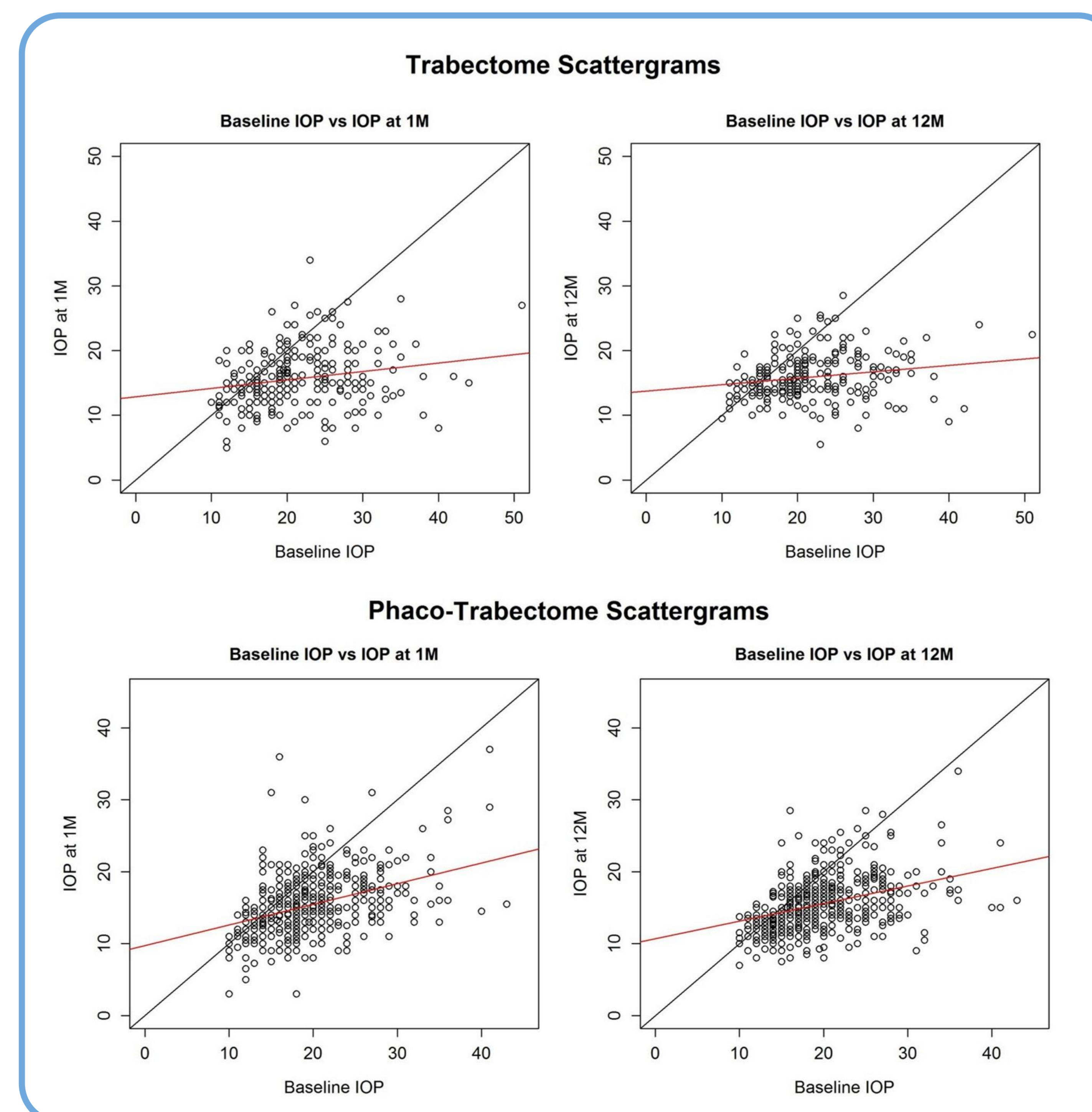
T had a 21% IOP reduction from 21.7 ± 7.0 to 15.9 ± 3.5 mmHg ($p < 0.01$) while PT had an 18% reduction from 19.7 ± 5.8 to 15.5 ± 3.6 mmHg ($p < 0.01$). Number of medications decreased ($p < 0.01$) in both groups from 2.4 ± 1.2 to 1.9 ± 1.3 and from 2.3 ± 1.1 to 1.7 ± 1.3 , respectively.

Discussion

Cataract surgery can lower intraocular pressure by an average of 1.5-3 mmHg. Non-randomized studies have found that trabectome surgery alone or combined with cataract surgery seemed to achieve similar postoperative IOPs.

Using Coarsened Exact Matching and multiple imputation to achieve a balanced comparison between two unequal groups, it was possible to precisely delineate whether same session cataract surgery provided an additive IOP lowering effect without introducing confounding variables.

Adding phacoemulsification to trabectome surgery in hopes of further reducing pressure may not provide these additional benefits. Therefore, in patients with uncontrolled pressures and no visually significant cataract, it may be safer and more cost effective to focus solely on TM ablation for IOP control.



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Disclosures

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